REMARKS

Claims 1-14, 16-33, 35-49, 51-68, 70-87, and 89-92 remain pending in the Application. Claims 1-14, 16-33, 35-49, 51-68, 70-87, and 89-92 are rejected. Claims 15, 34, 50, 69, and 88 have been cancelled. No new matter has been added. Applicants respectfully request reconsideration in view of the following remarks.

I. Claim Rejections under 35 U.S.C. § 102

The Examiner rejected claims 1, 20, and 39 under 35 U.S.C. § 102(e) as allegedly being unpatentable over U.S. Patent No. 6,781,474 ("Douziech"). Applicants respectfully traverse the rejection.

a. Claim 1

Claim 1 is directed to a filter calibration circuit including a comparator, a calibration logic unit, a DC voltage source, and a variable-gain amplifier. The comparator generates a comparator output based on a filter output amplitude signal and a reference amplitude signal, the filter output amplitude signal corresponding to an amplitude of an output signal produced by a filter circuit that is to be calibrated to a desired frequency. The calibration logic unit receives the comparator output and produces a component code to be used by the filter circuit in adjusting one or more component values in the filter circuit. The calibration logic unit further varies a gain of the variable-gain amplifier based on the comparator output. The DC voltage source produces the reference amplitude signal.

The Examiner rejected claim 1, stating that Douziech meets each of Applicants' recited limitations. Applicants respectfully disagree. Applicants respectfully assert that Douziech fails to teach or suggest, at least, <u>a comparator</u> that generates an output based on a filter output amplitude signal and a reference amplitude signal; <u>a calibration logic unit</u> that receives the comparator output and produces a component code used to adjust one or more component values in the filter circuit; and <u>a variable-gain amplifier</u> having a gain that is varied by the calibration logic unit based on the comparator output.

Douziech shows a circuit and method for tuning a filter by using a tuning control signal. (Abstract; col. 2, lines 21-26, 33-35; Fig. 1). Douziech's filter output signal is measured at two

frequencies, F1 and F2. (Col 2, lines 40-42; col. 3, lines 33-35, 38-40). The signal values at F1 and F2 are stored respectively in first and second storage devices and input to a comparator. (Col. 3, lines 13-16; col. 4, lines 26-32). The comparator generates a correction signal based on the comparison of the signals. (Abstract; col. 2, lines 42-44). Douziech's circuit also includes a switch that alternates between signals corresponding to F1 and F2 and provides a modulation signal having a frequency that varies between the two frequencies. (Abstract; col. 2, lines 38-39; col. 3, lines 20-23). Further, Douziech's circuit includes a filter tuning control circuit that generates an approximate filter tuning signal. (Col. 2, lines 36-38; col. 3, lines 18-19). Each of Douziech's correction signal, modulation signal, and approximate filter tuning signal are summed to form a single tuning control signal, which is received by the filter to adjust the output signal. (Col. 2, lines 35-38; col. 3, lines 16-27).

The Examiner suggests that Douziech's comparator is Applicants' comparator that generates an output <u>based on a filter output amplitude signal and a reference amplitude signal</u>. However, Douziech's comparator does not take a reference amplitude signal, i.e., an amplitude signal corresponding to a fixed frequency value, as input. Instead, Douziech's comparator takes two signals corresponding to the observed value of the filter output signal at two different frequencies, F1 and F2. (Col. 2, lines 40-44). As indicated by Douziech's Figs. 2a-2d, the values of these comparator inputs (signals S1 and S2, corresponding respectively to the filter outputs at F1 and F2) vary based on the frequency of the RF input signal. (Col. 3, line 55-col. 4, line 15). The comparison of these two signals is used to generate a correction signal, which is used in combination with two other signals – one of which is an "approximate filter tuning signal" – to retune the filter's output signal. (Col. 2, lines 35-38, 42-47). Neither of these inputs to Douziech's comparator, therefore, is Applicants' claimed <u>reference amplitude signal</u>. Additionally, neither of these inputs is Applicants' claimed <u>filter output amplitude signal</u>: both of Douziech's signals vary based on the frequency of the RF input signal, whereas Applicants' filter output amplitude signal is based on the peak voltage amplitude of the output signal. (*See* Application, para. [0019]). Applicants respectfully submit that claim 1 is allowable for at least these reasons.

The Examiner further suggests that the combination of Douziech's summing terminal 24, approximate filter tuning signal 19, filter tuning signal generator 20, control signal 23, switch 14, error signal 34, and comparator output signal 36, is Applicants' claimed calibration logic unit. As an initial matter, Applicants respectfully point out that no logical or structural relationship exists between the various components cited by the Examiner to support the Examiner's proposed interpretation of Applicants' calibration logic unit, and the Examiner has provided none. [1] The only cited component that receives the comparator output, as recited by Applicants' claim, is summing terminal 24, and nothing in Douziech suggests that summing terminal 24 produces a component code that is used by the filter circuit to adjust one or more component values in the filter circuit. Douziech states only that the filter tuning control signal "alters the RF input signal [to the filter] and resulting output signal." (Col. 3, lines 24-26). Applicants respectfully submit that claim 1 is allowable for at least these additional reasons.

Additionally, the Examiner suggests that Douziech's amplifier in the automatic gain control circuit of Fig. 4 is Applicants' variable-gain amplifier. However, the gain of Douziech's amplifier is not varied *by the calibration logic unit* based on the comparator output. Instead, an error signal is fed back from the output of the system through a level detector, and applied to Douziech's amplifier through the comparator. (Fig. 4; col. 5, lines 22-26). In other words, it is the comparator itself that varies the gain of Douziech's amplifier directly – not the calibration logic unit. As shown by Douziech's Fig. 4, none of the components asserted by the Examiner as comprising Applicants' claimed calibration logic unit vary the gain of Douziech's amplifier. Applicants respectfully submit that claim 1 is allowable for at least these additional reasons.

b. Claim 20

Claim 20 is directed to a filter calibration circuit that includes comparing means, code generating means, sourcing means and amplifying means. The comparing means generates a comparator output based on a filter output amplitude signal and a reference amplitude signal, the filter output amplitude signal corresponding to an amplitude of an output signal produced by a

[1] Elements 19, 20, and 23 relate to the generation of the approximate filter tuning signal; switch 14 provides the modulation signal; signals 34 and 36 relate to the automatic gain control circuit of Fig. 4; and summing terminal 24 combines the correction, modulation, and approximate filter tuning signals. (Col. 3, lines 16-22; col. 5, lines 22-31).

filtering means that is to be calibrated to a desired frequency. The code generating means receives the comparator output and produces a component code to be used by the filtering means in adjusting one or more component values in the filtering means. The code generating means further varies a gain of the amplifying means based on the comparator output. The sourcing means produces the reference amplitude signal.

As discussed above with respect to claim 1, Douziech fails to teach or suggest Applicants' claimed comparing means, code generating means, and amplifying means. Therefore, Applicants respectfully submit that Claim 20 is allowable for at least the reasons given above for claim 1.

c. Claim 39

Claim 39 is directed to a method for calibrating a filter circuit that receives an input signal and produces a filtered output signal. The method includes generating a comparator output based on a filter output amplitude signal and a reference amplitude signal. The filter output amplitude signal corresponds to an amplitude of the filtered output signal at a desired frequency. The method further includes generating a component code based on the comparator output, adjusting one or more component values in the filter circuit based on the component code, producing a fixed DC reference amplitude signal, and varying a gain based on the comparator output.

As discussed above with respect to claim 1, Douziech fails to teach or suggest Applicants' claimed steps of generating a comparator output, generating a component code, and varying a gain based on the comparator output. Therefore, Applicants respectfully submit that Claim 39 is allowable for at least the reasons given above for claim 1.

II. Claim Rejections under 35 U.S.C. § 103

A. The Examiner rejected claims 1, 20, and 39 under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 7,184, 729 ("Kluge") in view of U.S. Patent No. 6,307,433 B1 ("Gabara"). Applicants respectfully traverse the rejection.

The Examiner suggests that the combination of Kluge and Gabara meets the limitations of claim 1. The Examiner acknowledges that Kluge's automatic gain control circuit fails to

disclose Applicants' claimed <u>filter circuit that is to be calibrated to a desired frequency</u>. However, the Examiner suggests that Gabara's Fig. 1, which shows a frequency tuning circuit for tuning a filter to a desired frequency, meets this limitation. The Examiner further suggests that it would have been obvious to incorporate Gabara's "selection techniques" into Kluge "to tune the filter circuit to the desired center frequency for enhancing [the] output signal." Applicants respectfully disagree. Applicants respectfully submit that there is no reasonable rationale for incorporating Gabara's variable gain amplifier into Kluge's automatic gain control circuit.

Kluge shows an automatic gain control circuit for transceiver devices. (Abstract). Kluge's circuit includes a variable-gain amplifier and filter section that receives an RF signal and a "gain-setting" signal as inputs, and outputs an IF (intermediate frequency) signal to a rectifying section. (Col. 4, lines 42-48; Fig. 1a). The rectifying section receives the IF signal along with a clock input and provides a signal corresponding to the amplitude of the IF signal to a comparator section. (Col. 4, lines 48-52). The comparator section generates a bit pattern corresponding to the IF signal amplitude and provides that bit pattern to a latch, which latches the bit pattern to a control section upon a rising or falling clock edge. (Col. 4, lines 55-60, col. 5, lines 1-3, 39-44). The control section then transforms the bit pattern into a digital number that it converts into the gain-setting signal that is input the variable gain section. (Col. 5, lines 44-54).

Gabara shows a bandpass filter with automatic tuning adjustment. (Abstract). An input data signal with a dominant frequency f_0 is applied to the filter. (Abstract; col. 2, lines 66-67). The filter output signal is passed to a peak/power detector, which measures the power magnitude of the signal and passes this magnitude value to a monitoring circuit. (Fig. 1; Abstract; col. 3, lines 9-12). The monitoring circuit compares the present power magnitude value to the previously-measured power magnitude, and outputs a tuning signal reflecting this comparison to a finite state machine. (Col. 3, lines 13-17). The finite state machine adjusts the tuning signal until the power of the filter output signal is maximized, which indicates that the filter is tuned to its dominant frequency. (Col. 3, lines 17-19; Abstract).

The Examiner suggests – without explanation – that it would have been obvious to incorporate Gabara's "selection techniques" into Kluge's gain control circuit to "to tune the filter circuit to the desired center frequency for enhancing [the] output signal." At the very least, the Examiner has provided no details on how Gabara's design might be combined with that of Kluge, or, indeed, on what elements of Gabara's design are the proposed subject of the combination. *See, e.g., KSR Intern. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007), *citing In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (stating that "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness").

The vagueness of the Examiner's rationale aside, Applicants respectfully submit that Gabara's bandpass filter is entirely irrelevant to Kluge's design. As the Examiner recognizes, Kluge fails to disclose a filter circuit calibrated to a desired frequency. This is because Kluge is concerned exclusively with adjusting signal gain, i.e., with the ratio of signal *magnitude* – not with signal frequency. Kluge makes no mention of "selection techniques" for selecting bandpass frequencies. Indeed, Kluge discloses no frequency control whatsoever. Rather, as shown in Figs. 3 and 4a-4b, Kluge's system operates entirely in the time domain and describes a system and method for controlling signal gain.

For at least these reasons, Applicants respectfully submit that no reasonable rationale exists for combining Kluge with Gabara, and therefore the Examiner has failed to establish a *prima facie* case of obviousness. Applicants submit that claim 1 is allowable over the asserted combination of Kluge and Gabara for at least these additional reasons.

Applicants respectfully submit that Claim 20 is allowable over the asserted combination of Kluge and Gabara for at least the reasons given for claim 1.

Applicants respectfully submit that Claim 39 is allowable over the asserted combination of Kluge and Gabara for at least the reasons given for claim 1.

B. The Examiner rejected claims 1-14, 16-33, 35-38, 55-68, 70-87, and 89-92 under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,766,150 B1

("Johnson") in view of U.S. Patent No. 5,081,713 ("Miyazaki"). Applicants respectfully traverse the rejection.

a. Claim 1 and its dependent claims

The Examiner suggests that the combination of Johnson and Miyazaki meets the limitations of Applicants' claim 1 and suggests that it would have been obvious to incorporate the elements of Miyazaki into Johnson. Applicants respectfully disagree. Applicants respectfully submit that there is no reasonable rationale for incorporating Miyazaki's reference voltage generator and variable gain high frequency amplifier circuit into Johnson's filter calibration circuit.

Johnson shows a system for tuning a narrowband cavity filter inside an RF transmitter. (Abstract). The system includes a filter calibration circuit coupled to the output of the narrowband cavity filter. (Abstract; col. 6, lines 4-19). Johnson's filter calibration circuit includes a filter calibration controller that stores reference signal levels corresponding to various transmit frequencies in its internal software and compares the level of the narrowband cavity filter output signal with these stored levels. (Col. 8, lines 23-25; col. 9, lines 35-39). The controller outputs digital control signals to a digital-to-analog converter to determine whether to maintain, increase, or decrease the filter frequency, and at which rate any change in frequency should occur. (Col. 8, lines 23-32). The digital-to-analog converter converts these digital control signals to control voltages for input to the filter. (Col. 8, lines 32-39). Johnson's system tunes the filter until the measured value of the output signal level reaches a minimum, which indicates that the filter has been properly tuned to the center transmit frequency for the selected channel. (Col. 9, lines 62-65; col. 10, lines 12-14).

The Examiner suggests that it would have been obvious to incorporate the "selection techniques" of Miyazaki into Johnson "as to include a DC voltage source to produce the reference amplitude signal as an alternative embodiment; and to adjust amplifier 330 to amplify the output signal to a desired level based on the comparator output, specially for the case when the output signal level is still below the desired level even after the filter is adjusted to center frequency."

Again, the Examiner fails to indicate what is meant by "selection techniques," and provides no details on how Miyazaki's design might be combined with that of Johnson. As Applicants have stated above, this rationale fails to provide the explanation required to establish a *prima facie* case of obviousness. *See, e.g., KSR Intern. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007), *citing In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness").

Neither of the Examiner's stated rationales provides any reasonable rationale for combining Johnson with Miyazaki. First, the Examiner acknowledges that Johnson fails to teach or suggest Applicants' claimed DC voltage source but suggests that Miyazaki's reference voltage generator 27 meets this limitation. However, Miyazaki's voltage generator would not be able to produce a reference amplitude signal compatible with Johnson's design. Johnson's filter calibration controller stores reference signal levels that correspond specifically to various transmit frequencies. (Col. 9, lines 35-39). In contrast, Miyazaki's voltage generator generates signals that represent component temperature and frequency conditions. Miyazaki's voltage generator is controlled by a voltage generator controller, which operates in response to both an analog temperature signal and a signal corresponding to the frequency of an active transmission channel. (Col. 3, lines 55-63; col. 4, lines 17-20, 65-68; col. 5, lines 50-54). Therefore, not only would the combination of Johnson with Miyazaki require extensive temperature-sensing circuitry to be added to Johnson's design, but even with the addition, Johnson would still be missing information needed to perform its frequency adjustment – specifically, the bank of reference signal levels corresponding to various transmit frequencies.

Additionally, the Examiner's second stated rationale for the combination of Johnson with Miyazaki – to address the case where the filter output signal level is "still below the desired level" even after the filter is adjusted to center frequency – misconstrues Johnson's invention. The goal of Johnson's circuit is to provide a tuning method for a narrowpass cavity filter that uses a reduced number of filters but maintains signal protection against unwanted frequency and

noise components. (Col. 1, lines 28-56). Johnson's design attempts to accomplish this goal by monitoring deviation from a desired frequency, the center frequency of the transmit channel. (Col. 6, lines 65-66; col. 8, lines 40-55). Therefore, the "desired level" for Johnson's filter output occurs when the filter is adjusted to center frequency; in the context of Johnson's circuit, the "desired level" and center frequency conditions are synonymous. Accordingly, Applicants respectfully assert that the Examiner's "still below the desired level" rationale is inappropriate.

For at least these reasons, Applicants respectfully submit that the Examiner has failed to show the existence of any reasonable rationale for combining Johnson and Miyazaki and has therefore failed to establish a *prima facie* case of obviousness. Applicants respectfully submit that claim 1 is allowable for at least these reasons.

Claims 2-14 and 16-18 depend from claim 1, and are allowable for at least the reasons given above with respect to claim 1.

Claim 3 is also separately allowable for at least the following additional reasons. Claim 3 recites that <u>the filter circuit includes an LC tank circuit</u>. The Examiner acknowledges that Johnson as modified by Miyazaki fails to teach or suggest this limitation. However, the Examiner states that "Official Notice is taken that the teaching is well known in the art. Therefore, the LC tank filter circuit is tuned to the center frequency." Applicants respectfully submit that it is improper for the Examiner to dismiss Applicants' limitation in this manner. While the general configuration of an LC tank circuit may be known in the art, the inclusion of such a circuit within a complicated design – such as the design of Applicants' invention – is not. It is improper to premise a rejection of a technical design choice on the unsupported assertion that the particular element, considered separately from the invention, is known in the art. *See, e.g., Application of Ahlert*, 424 F.2d 1088, 1091 (C.C.P.A. 1970). Applicants respectfully submit that claim 3 is allowable for at least these additional reasons.

Claim 8 is also separately allowable for at least the following additional reasons. Claim 8 recites that <u>the component code varies a capacitance in the filter circuit</u>. In support of the rejection of this claim, the Examiner states only to "consider tuning a LC tank filter." However, as stated above, the Examiner acknowledges that Johnson as modified by Miyazaki fails to teach

or suggest that Applicants' claimed filter circuit includes an LC tank circuit. Additionally, nothing in either Johnson or Miyazaki suggests using a component code to vary a capacitance in a filter circuit. Applicants respectfully submit that claim 8 is allowable for at least these additional reasons.

Claims 9 and 10 depend from claim 8, and are also separately allowable for at least the additional reasons given above with respect to claim 8.

Claim 16 is also separately allowable for at least the following additional reasons. Claim 16 recites that the filter calibration circuit is operable to calibrate the filter circuit to the desired frequency automatically when the filter calibration circuit is connected to a power source. The Examiner cites generally to Fig. 3 and col. 9, lines 34-65 of Johnson as allegedly showing this limitation. However, nothing in the cited portions of Johnson suggests automatically calibrating the filter circuit to the desired frequency when the filter calibration circuit is connected to a power source. Miyazaki fails to correct for this deficiency. Applicants respectfully submit that claim 16 is allowable for at least these additional reasons.

Claim 17 is also separately allowable for at least the following additional reasons. Claim 17 recites that the filter calibration circuit is operable to calibrate the filter circuit to the desired frequency without requiring a reduction in a quality factor of the filter circuit. Again, the Examiner cites generally to Fig. 3 and col. 9, lines 34-65 of Johnson as allegedly showing this limitation. However, nothing in the cited portions of Johnson suggests calibrating the filter circuit to the desired frequency without requiring a reduction in a quality factor of the filter circuit. Indeed, nowhere does Johnson even refer to the quality factor of the filter circuit. Miyazaki fails to correct for this deficiency. Applicants respectfully submit that claim 17 is allowable for at least these additional reasons.

b. Claim 20 and its dependent claims

Claim 20 is directed to a filter calibration circuit that includes comparing means, code generating means, sourcing means and amplifying means. The comparing means generates a comparator output based on a filter output amplitude signal and a reference amplitude signal, the filter output amplitude signal corresponding to an amplitude of an output signal produced by a

filtering means that is to be calibrated to a desired frequency. The code generating means receives the comparator output and produces a component code to be used by the filtering means in adjusting one or more component values in the filtering means. The code generating means further varies a gain of the amplifying means based on the comparator output. The sourcing means produces the reference amplitude signal.

As discussed above with respect to claim 1, the Examiner has provided no reasonable rationale for combining Johnson and Miyazaki. Applicants respectfully submit that claim 20 is allowable over the asserted combination of Johnson and Miyazaki for at least these reasons.

Claims 21-33 and 35-38 depend from claim 20, and are allowable for at least the reasons given with respect to claim 20.

Claim 22 is also separately allowable for at least the additional reasons given with respect to claim 3.

Claim 27 is also separately allowable for at least the additional reasons given with respect to claim 8.

Claims 28 and 29 depend from claim 27, and are allowable for at least the reasons given with respect to claim 27.

Claim 35 is also separately allowable for at least the additional reasons given with respect to claim 16.

Claim 36 is also separately allowable for at least the additional reasons given with respect to claim 17.

c. Claim 55 and its dependent claims

Claim 55 is directed to a wireless transceiver including a transmitter that transmits a modulated carrier signal, the transmitter including a filter circuit that filters the modulated carrier signal, a calibration circuit that calibrates the filter circuit to a desired frequency, a DC voltage source, and a variable-gain amplifier. The calibration circuit includes a comparator and a calibration logic unit. The comparator generates a comparator output based on a filter output amplitude signal and a reference amplitude signal, the filter output amplitude signal corresponding to an amplitude of an output signal produced by the filter circuit. The calibration

logic unit receives the comparator output and produces a component code to be used by the filter circuit in adjusting one or more component values in the filter circuit. The calibration logic unit further varies a gain of the variable-gain amplifier based on the comparator output. The DC voltage source produces the reference amplitude signal.

As discussed above with respect to claim 1, the Examiner has provided no reasonable rationale for combining Johnson and Miyazaki. Applicants respectfully submit that claim 55 is allowable over the asserted combination of Johnson and Miyazaki for at least these reasons.

Claims 56-68 and 70-73 depend from claim 55, and are allowable for at least the reasons given with respect to claim 55.

Claim 57 is also separately allowable for at least the additional reasons given with respect to claim 3.

Claim 62 is also separately allowable for at least the additional reasons given with respect to claim 8.

Claims 63 and 64 depend from claim 62, and are allowable for at least the reasons given with respect to claim 62.

Claim 70 is also separately allowable for at least the additional reasons given with respect to claim 16.

Claim 71 is also separately allowable for at least the additional reasons given with respect to claim 17.

d. Claim 74 and its dependent claims

Claim 74 is directed to a wireless transceiver including transmitting means for transmitting a modulated carrier signal. The transmitting means includes a filtering means for filtering the modulated carrier signal, calibrating means for calibrating the filtering means to a desired frequency, sourcing means, and amplifying means. The calibrating means includes comparing means for generating a comparator output based on a filter output amplitude signal and a reference amplitude signal, the filter output amplitude signal corresponding to an amplitude of an output signal produced by the filtering means, and code generating means for receiving the comparator output and producing a component code to be used by the filtering

means in adjusting one or more component values in the filtering means. The code generating means further varies a gain of the amplifying means based on the comparator output. The sourcing means produces the reference amplitude signal.

As discussed above with respect to claim 1, the Examiner has provided no reasonable rationale for combining Johnson and Miyazaki. Applicants respectfully submit that claim 74 is allowable over the asserted combination of Johnson and Miyazaki for at least these reasons.

Claims 75-87 and 89-92 depend from claim 74, and are allowable for at least the reasons given with respect to claim 55.

Claim 76 is also separately allowable for at least the additional reasons given with respect to claim 3.

Claim 81 is also separately allowable for at least the additional reasons given with respect to claim 8.

Claims 82 and 83 depend from claim 81, and are allowable for at least the reasons given with respect to claim 81.

Claim 89 is also separately allowable for at least the additional reasons given with respect to claim 16.

Claim 90 is also separately allowable for at least the additional reasons given with respect to claim 17.

C. The Examiner rejected claims 39-49 and 51-54 under 35 U.S.C. § 103(a) as being unpatentable over Johnson in view of Gabara. Applicants respectfully traverse this rejection.

a. Claim 39 and its dependent claims

The Examiner suggests that the combination of Johnson and Gabara meets the limitations of claim 39 and suggests that it would have been obvious to incorporate the "selection techniques" of Gabara into Johnson "as to produce a fixed DC reference amplitude signal and store reference amplitude signal[s] as an alternative embodiment." Applicants respectfully disagree. Applicants respectfully submit that there is no reasonable rationale for combining Johnson with Gabara.

Again, the Examiner has not provided any explanation whatsoever as to how Gabara and Johnson might be combined, what particular elements of Gabara are the subject of the proposed combination, or what is meant by "selection techniques." [2] This falls short of the explanation required to establish a *prima facie* case of obviousness. *See, e.g., KSR Intern. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007), *citing In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness").

Further, Applicants respectfully assert that the Examiner's stated rationale for the proposed combination is nonsensical. The Examiner states that it would be obvious to combine Johnson and Gabara "as to produce a fixed DC reference amplitude signal and store [the] reference amplitude signal as an alternative embodiment." The first portion of this "rationale" merely restates Applicants' limitation; it provides no "articulated reasoning" as to why the combination would be obvious. The second portion posits that the signal produced by Gabara's voltage source could be stored by Johnson's circuit as an "alternative embodiment." However, the reference signals stored by Johnson's filter calibration circuit each correspond to particular transmit frequencies; Johnson's circuit performs frequency adjustment by comparing the level of the narrowband cavity filter output signal with these stored levels. (Col. 8, lines 23-25; col. 9, lines 35-39). In contrast, the cited passages of Gabara disclose a "DC reference voltage with a predefined and known magnitude," which the is used to set the peak amplitude of a reference signal (Col. 1, lines 34-41). Gabara's DC reference voltage, which has no correlation to any transmit frequency, is entirely irrelevant to Johnson's design.

For at least these reasons, Applicants respectfully submit that the Examiner has failed to show the existence of any reasonable rationale for combining Johnson and Gabara and has therefore failed to establish a *prima facie* case of obviousness. Applicants respectfully submit that claim 39 is allowable for at least these reasons.

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[2] As the Examiner is relying on Gabara to provide the missing step of <u>producing a fixed DC reference amplitude signal</u>, the term "selection techniques," inherent ambiguity aside, appears to lack any relevance to this rejection.

Claims 40-49 and 51-54 depend from claim 39, and are allowable for at least the reasons given above with respect to claim 39.

Claim 43 is also separately allowable for at least the following additional reasons. Claim 43 recites that <u>adjusting a capacitance includes adjusting a capacitance in the filter circuit</u>. In support of the rejection of this claim, the Examiner states only to "consider tuning a LC tank filter." However, the combination of Johnson and Gabara fails to teach or suggest a LC tank circuit, and the Examiner has not asserted otherwise. Additionally, nothing in the relied-upon portions of either Johnson or Gabara suggests using a component code to vary a capacitance in a filter circuit. Applicants respectfully submit that claim 43 is allowable for at least these additional reasons.

Claims 44 and 45 depend from claim 43, and are also separately allowable for at least the additional reasons given above with respect to claim 43.

Claim 51 is also separately allowable for at least the following additional reasons. Claim 51 recites calibrating the filter circuit to the desired frequency automatically when the filter calibration circuit is connected to a power source. The Examiner cites generally to Fig. 3 and col. 9, lines 34-65 of Johnson as allegedly showing this limitation. However, nothing in the cited portions of Johnson suggests automatically calibrating the filter circuit to the desired frequency when the filter calibration circuit is connected to a power source. Gabara fails to correct for this deficiency. Applicants respectfully submit that claim 51 is allowable for at least these additional reasons.

Claim 52 is also separately allowable for at least the following additional reasons. Claim 52 recites calibrating the filter circuit to the desired frequency without requiring a reduction in a quality factor of the filter circuit. Again, the Examiner cites generally to Fig. 3 and col. 9, lines 34-65 of Johnson as allegedly showing this limitation. However, nothing in the cited portions of Johnson suggests calibrating the filter circuit to the desired frequency without requiring a reduction in a quality factor of the filter circuit. Indeed, nowhere does Johnson even refer to the quality factor of the filter circuit. Gabara fails to correct for this deficiency. Applicants respectfully submit that claim 52 is allowable for at least these additional reasons.

III. Conclusion

By responding in the foregoing remarks only to particular positions taken by the Examiner, Applicants do not acquiesce to other positions that have not been explicitly addressed. Additionally, Applicants' arguments for the patentability of a claim should not be understood as implying that no other reasons for the patentability of that claim exist.

No fees are believed due. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: October 22, 2008

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